

REMARKS/ARGUMENTS

Claims 1-14 are pending in the present application. Claim 1 has been amended. Support for the amendment to claim 1 can be found throughout the specification, as originally filed, e.g., examples/tables at pages 23 and 24. No new matter has been added.

Reconsideration of the present application is requested in view of the following remarks.

Rejection under 35 U.S.C. § 103(a)

The rejection of claims 1-14 under 35 U.S.C. § 103(a) as obvious over Jungkamp et al. (WO 02/26698) is respectfully traversed.

Jungkamp et al. does not describe or suggest a

process for separating mixtures of isomeric pentenenitriles, in which at least one isomer is depleted from the mixture, which comprises effecting the separation of the *mixtures of isomeric pentenenitriles selected from the group consisting of*

- mixtures comprising 2-methyl-3-butenitrile and 3-pentenenitrile,
- mixtures comprising 2-methyl-3-butenitrile and (Z)-2-methyl-2-butenitrile,
- mixtures comprising cis-2-pentenenitrile and 3-pentenenitrile

by distilling under a pressure of from 0.01 to 0.5 bar and

- mixtures comprising (E)-2-methyl-2-butenitrile and 3-pentenenitrile

by distilling under a pressure of from 0.02 to 0.5 bar.

Amended claim 1. (Emphasis added).

As appreciated by the Office, the present claims differ from the disclosure of Jungkamp et al., since the reference does not teach “the exact pairs of isomers that are listed in claim 1 nor does Jungkamp et al. teach the exact reactions that the mixtures come from.” Present Office Action at page 3.

The Office further asserts that, *inter alia*, it would be obvious “to take the method proven by Jungkamp et al. and apply it to other mixtures of pentenenitrile” and that one would be able

“to complete the distillation irrespective of which reaction the mixture of pentenenitriles originated from.” *Id.* at pages 3-4.

However, Applicants point out that the Office has not shown or provided an apparent reason for one to modify the method/reaction conditions described in Jungkamp et al., based on the distillation conditions provided in the present claims.

In particular, as described in the reference, the distillation process specifically involves separation of pentene nitrile isomers which have a relative volatility α ranging from 1.0 to 1.3 in the pressure range from 1 to 500 kPa, wherein the distillation is carried out in the presence of a liquid diluent which forms with the pentene nitrile isomers, *under the same pressure conditions*. See Abstract. According to the document, the process affords, in a technically simple and economical manner, the distillative separation of pentene nitrile isomers which have a relative volatility α ranging from 1.0 to 1.3 in the pressure range from 1 to 500 kPa.

By contrast, in the present claims and specification, the distillation of the mixtures comprising cis-2-pentenenitrile and 3-pentenenitrile is carried out *under a pressure of from 0.01 to 0.5 bar* and distillation of the mixtures comprising (E)-2-methyl-2-butenitrile and 3-pentenenitrile is carried out *under a pressure of from 0.02 to 0.5 bar*. Specifically, the separation of the substance mixtures of isomeric pentenenitriles is effected distillatively *under reduced pressure*.

Regarding mixtures comprising cis-2-pentenenitrile and 3-pentenenitrile, it is shown in the examples of the present specification at page 23 “that, at the same reflux ratio and same removal rates, the lower the pressure in the column is set, the higher the efficiency with which the separation of trans-3-pentenenitrile and cis-2-pentenenitrile succeeds: at lower pressure, the residual content of trans-3-pentenenitrile in top draw decreases and the content of cis-2-pentenenitrile to be removed in the tops increases.” See Table 6.

Regarding mixtures comprising 3-pentenenitrile and (E)-2-methyl-2-butenitrile it is shown in the examples of the present specification at pages 23-24 “that, at the same reflux ratio and same removal rates, the lower the pressure in the column is set, the higher the efficiency with which the separation of trans-3-pentenenitrile and (E)-2-methyl-2-butenitrile succeeds: at lower pressure, the residual content of (E)-2-methyl-2-butenitrile in the bottom draw stream decreases and increases in the top draw stream.” See Table 9.

Further, it is noted at page 24 of the present specification that “for the achievement of a required specification of the particular pentenenitrile isomers in the bottom and top of the distillation column, when the distillation is performed under reduced pressure, fewer separating stages and/or less energy is needed than would be expected from the consideration of the known standard boiling points.”

Therefore, as Jungkamp et al. does not describe or suggest the results achieved by the reduced pressures, the claimed invention is not obvious over Jungkamp et al. Accordingly, withdrawal of the rejection is requested.

In view of the foregoing, consideration and allowance are respectfully solicited.

In the event the Examiner believes an interview might serve in any way to advance the prosecution of this application, the undersigned is available at the telephone number noted below.

The Office is authorized to charge any necessary fees to Deposit Account No. 03-2775.

Applicants believe no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 03-2775, under Order No. 12810-00323-US1 from which the undersigned is authorized to draw.

Dated: January 5, 2009

Respectfully submitted,

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